

10/25/23 • Interim Study Committee on Commerce and Economic Development

Artificial Intelligence and Indiana

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Owner, Astra Applications & Crown Jewel Marketing



Agenda

- Artificial Intelligence 101
- ChatGPT & Generative AI
- Benefits & Practical Use-cases
- Potential Risks & Challenges

Technological Revolutions (Part 1)



Printing Press



Telephone



Television

Technological Revolutions (Part 2)



The Internet



Smart Phone



Social Media



**Artificial Intelligence
(AI) is this generation's
technological revolution.**

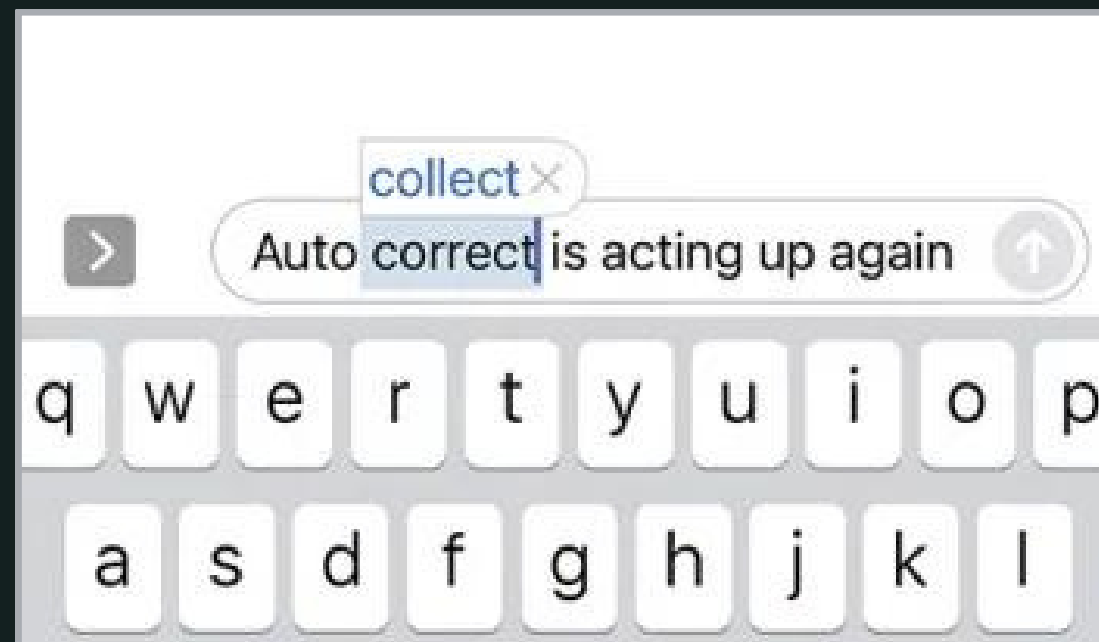
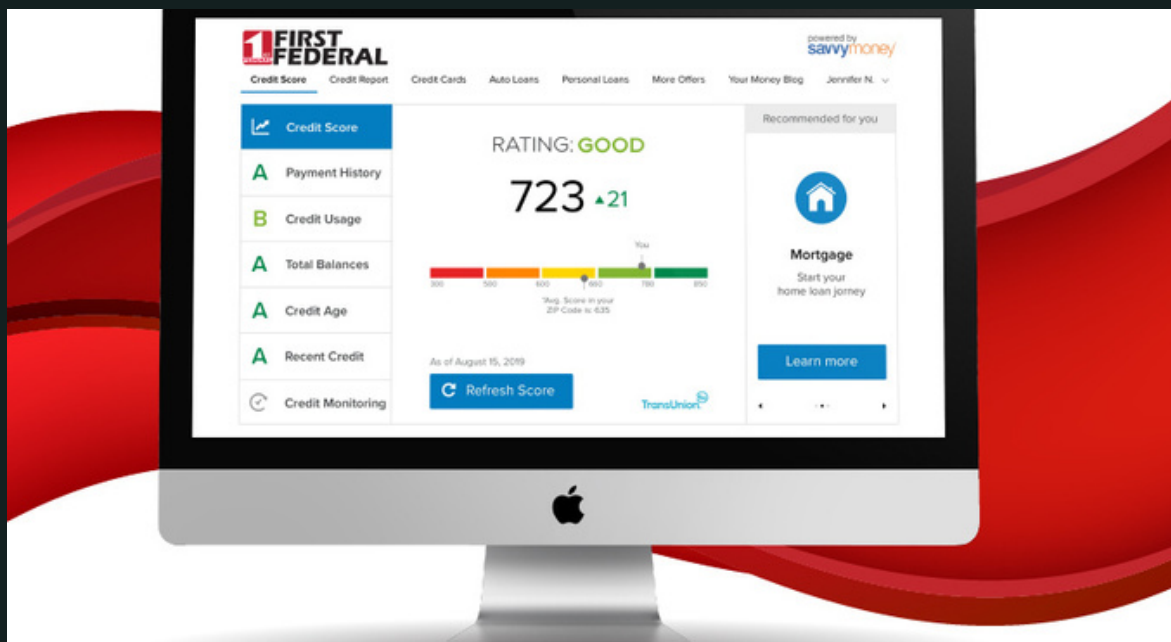
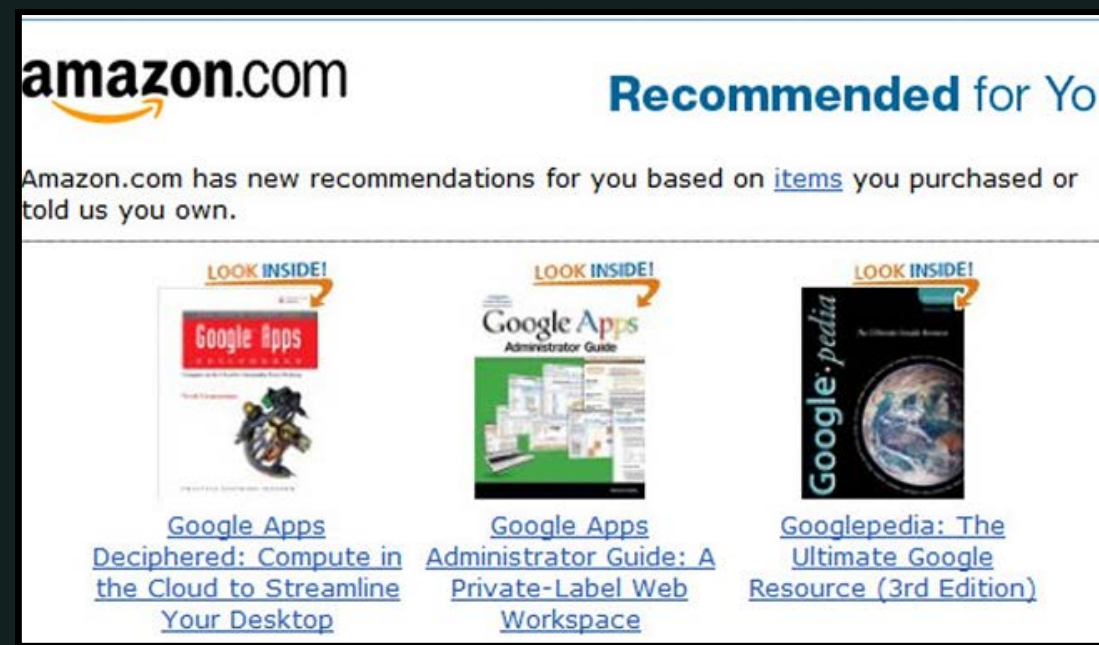
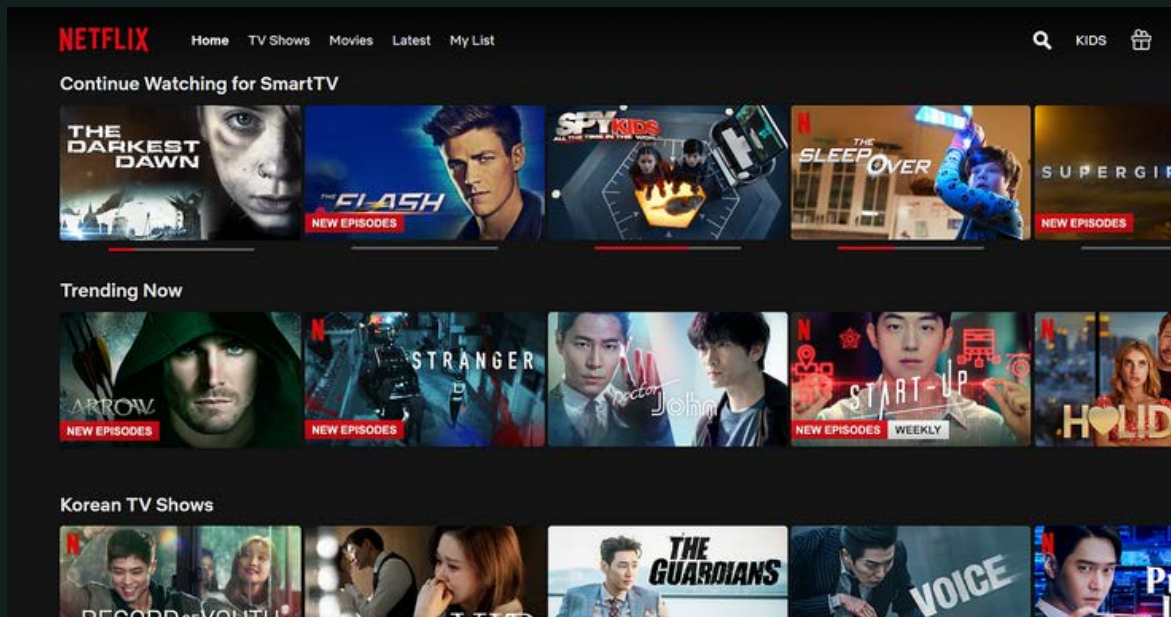


What is AI?

Computers Thinking Like Humans

Artificial Intelligence (AI) refers to the ability of computers to carry out tasks such as learning, reasoning, problem-solving, natural language comprehension, speech recognition, creation, and visual perception.

AI has been a part of our lives for a long time.



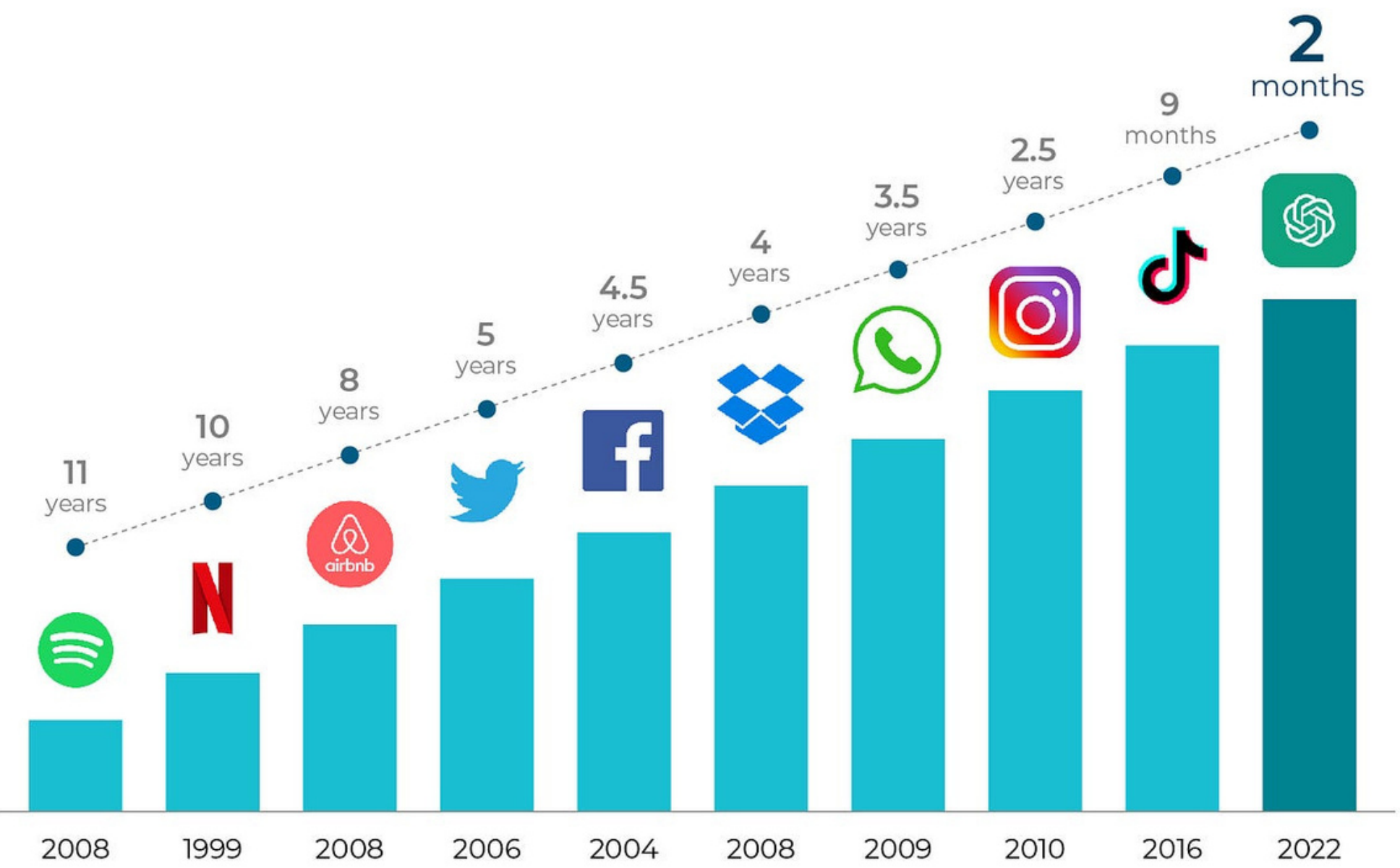


What has led to the recent surge in popularity and adoption of AI?



ChatGPT

ChatGPT is the fastest adopted app ever.



Source: World of Statistics

THE WALL STREET JOURNAL


OpenAI's ChatGPT now has a voice, making it more like other AI assistants.

TECHNOLOGY | PERSONAL TECHNOLOGY | PERSONAL TECHNOLOGY: JOANNA STERN

You Can Now Talk With ChatGPT and It Sounds Like a Human (Pretty Much)

Oh, and it can 'see' you now

60 MINUTES



**ChatGPT's results are wildly
effective and very human-like.**



Generative AI

From narrow rules to pure creation

- It learns and thinks like humans.
- It can create from scratch (generate) and execute complicated tasks.
- It remembers and understands context.
- It has access to vast amounts of information.
- Its language models and algorithms are always learning and expanding.
- It's conversational, interactive, and not robotic.
- **It has intuition. It feels human.**

Generative AI Use-cases

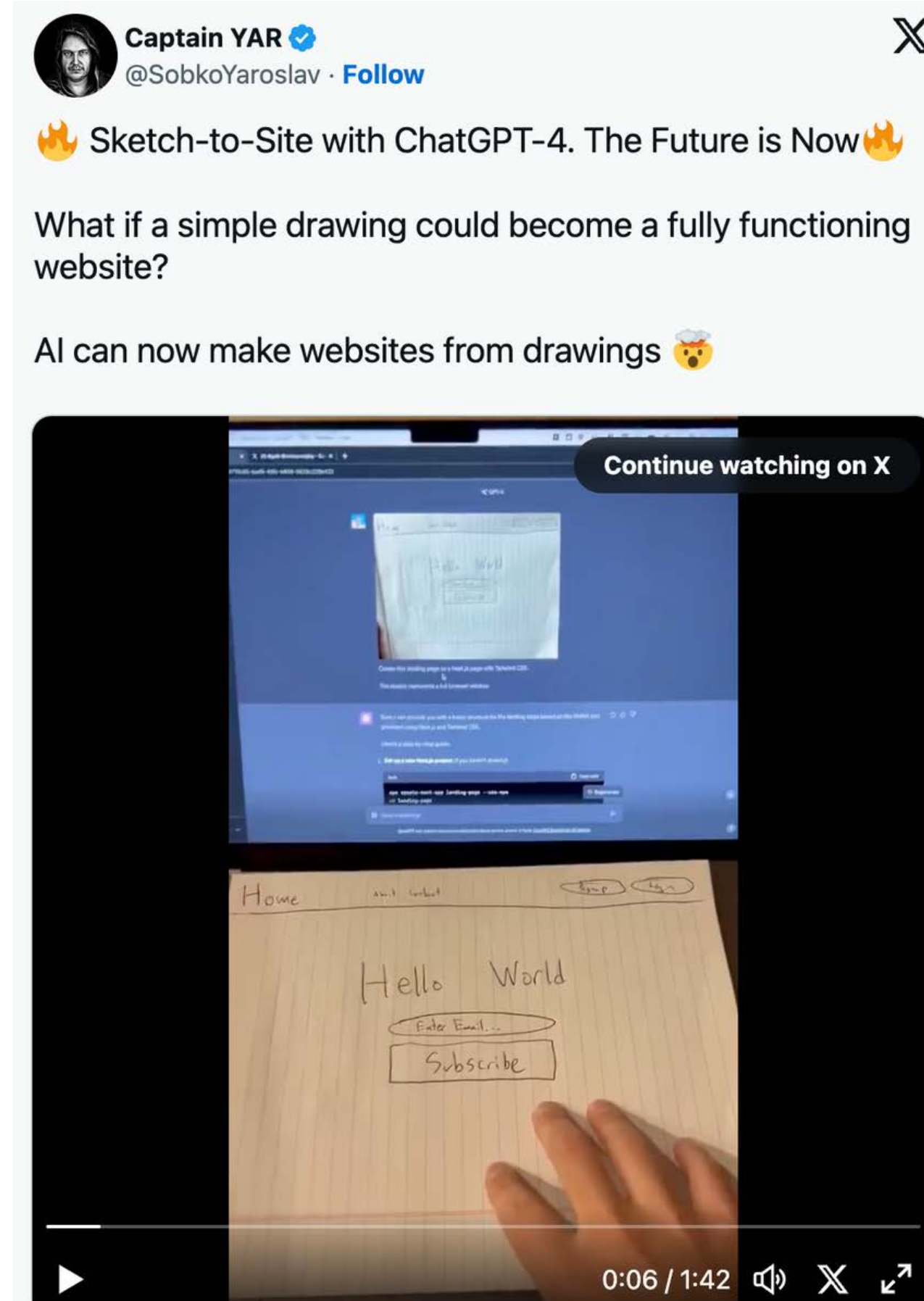
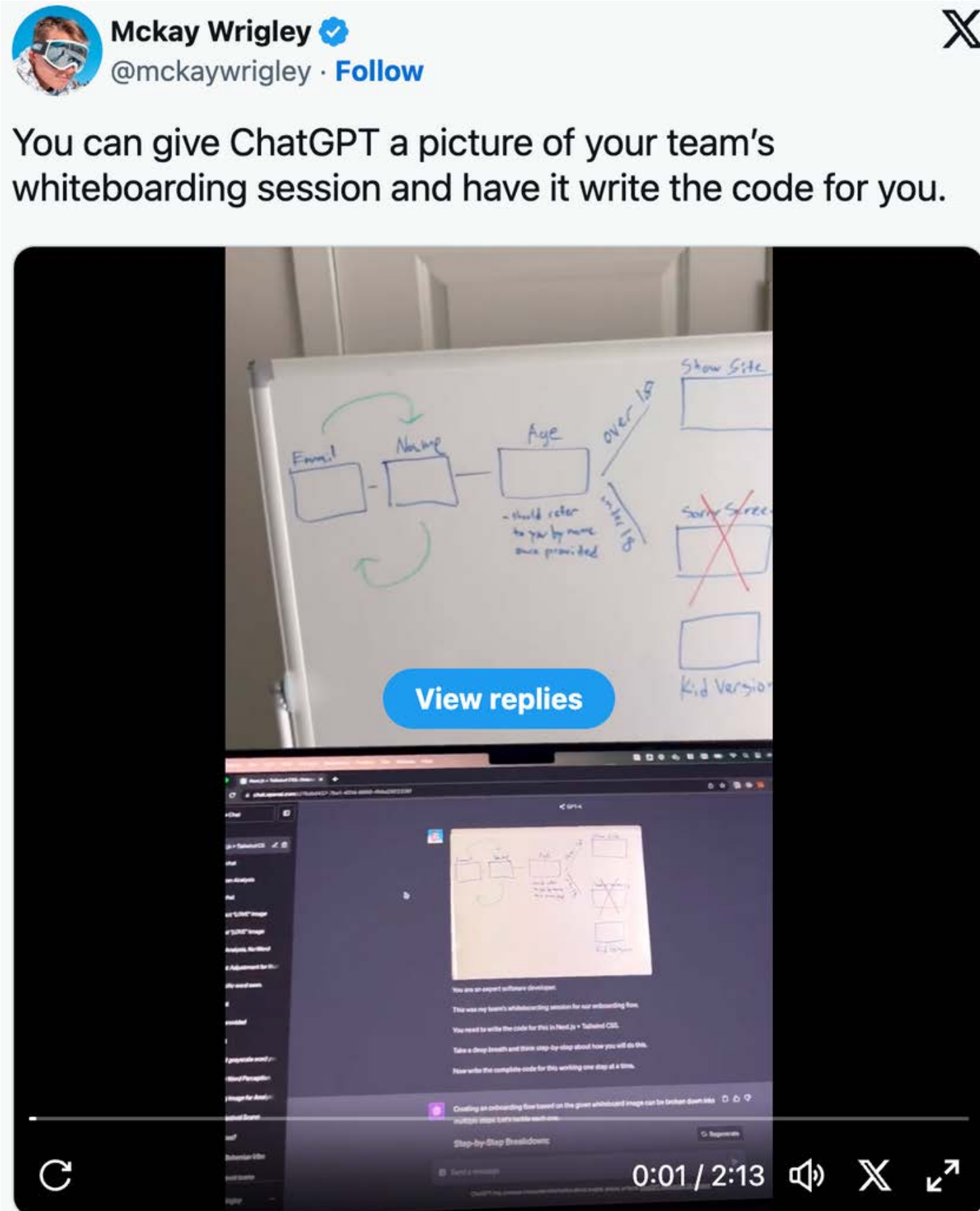
- Writing content for emails, press releases, memos, marketing, articles, social media
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AI Photographer: Generate Photo-realistic Images



AI Developer: Turn Sketches into Fully Functioning Apps



AI Interior Designer: Get Design Recommendations



How could I improve this room?



Certainly! From the image you provided, here are some suggestions to enhance the room:



1. **Color:** Introduce some accent colors, maybe inspired by Italian designs since you're originally from Italy. This could be in the form of cushions, art, or other decor items.
2. **Lighting:** Consider adding layered lighting such as floor lamps or wall-mounted lights. This can help in creating a cozy atmosphere, especially during the evening.
3. **Plants:** Add some indoor plants or flowers. Not only do they purify the air, but they also add a touch of nature and can act as a focal point.
4. **Art:** Given your background in classical studies and art, perhaps adding some artwork on the walls could be a great personal touch. They could be prints of classical artworks or something contemporary to create a blend of old and new.
5. **Rug:** While the current rug adds a nice texture, you might consider a rug with some color or pattern to break the monotony.
6. **Storage:** Incorporate some stylish storage solutions. Floating shelves or a chic bookcase could both provide storage and act as a display for your favorite items.
7. **Furniture:** Rearrange the furniture, if space allows, to create a more inviting seating area. Maybe a small coffee table in front of the sofa.
8. **Mirror:** The current mirror is lovely, but you might also consider adding a larger decorative mirror on another wall. It can help reflect light and make the room feel more spacious.
9. **Window Treatment:** Consider adding curtains or blinds to the window. It can add warmth, privacy, and can be a great way to introduce color and texture.
10. **Personal Touch:** As you've built AI experiment apps and have a background in tech, maybe incorporate some smart home elements or display some tech-themed decor.

Remember, the best designs often reflect the personality and tastes of the inhabitants, so be sure to incorporate elements that resonate with you. Enjoy your decorating!

Regenerate

AI Tutor: Get Help With Homework



ChatGPT breaks down this diagram of a human cell for a 9th grader.

Continue watching on X

GPT-4

Human Cell

Chromatin, Nucleolus, Smooth Endoplasmic Reticulum, Cytoplasm, Lysosome, Mitochondrion, Centrioles, Centrosome, Matrix, Microvilli, Microfilaments, Microtubule, Intermediate Filaments, Peroxisome, Nuclear Envelope, Nucleus, Plasma Membrane, Rough Endoplasmic Reticulum, Golgi Apparatus, Secretion, Ribosomes

shutterstock

I'm a 9th grade biology student and I'm really struggling in school. Can you help me understand this?

Of course! Let's break down the parts of the human cell depicted in the image:

1. **Nucleus:** This is the cell's control center. It contains our DNA and regulates the cell's activities.

Send a message

ChatGPT may produce inaccurate information about people, places, or facts. ChatGPT: September 25, 2023

1:28 / 1:40

Questions on Chapter 1 | Lesson One

73. The opposite table shows different values of lengths, cross-sectional areas and resistivities for wires that are made of different materials:

	Wire length l (m)	Cross-sectional area A (cm ²)	Resistivity $\rho_e \times 10^{-4}$ ($\Omega \cdot m$)
(1)	10	0.1	0.05
(2)	5	0.5	0.25
(3)	5	0.1	0.5
(4)	0.5	0.5	0.005

(i) Which of these wires carries a current of intensity 2 A when the potential difference between its terminals equals 10 V?
(a) Wire (1) (b) Wire (2) (c) Wire (3) (d) Wire (4)

(ii) Which of these wires gives larger amount of heat than the other wires when the same current intensity passes through them for the same time interval?
(a) Wire (1) (b) Wire (2) (c) Wire (3) (d) Wire (4)

(iii) Which of these wires gives less thermal power than the other wires when each of them is connected between the same potential difference?
(a) Wire (1) (b) Wire (2) (c) Wire (3) (d) Wire (4)

74. A wire of resistance R consumes an electric power P_w when the potential difference between its terminals is V , if the wire is drawn uniformly so that its length gets doubled while keeping the potential difference between its terminals V , it will consume an electric power of
(a) $2 P_w$ (b) $4 P_w$ (c) $\frac{P_w}{2}$ (d) $\frac{P_w}{4}$

75. * A wire of length 2 m has a cross-sectional area of $4 \times 10^{-6} \text{ m}^2$, when the potential difference between its terminals was 20 V, the consumed power through it was 10 W, so:

(i) The resistivity of the wire's material equals
(a) $2 \times 10^{-7} \Omega \cdot m$ (b) $10^{-5} \Omega \cdot m$
(c) $8 \times 10^{-5} \Omega \cdot m$ (d) $4 \times 10^{-6} \Omega \cdot m$

(ii) The number of electrons that pass through a cross-section of the wire in one minute equals (Where: $e = 1.6 \times 10^{-19} \text{ C}$)
(a) 9.741×10^{17} electrons (b) 6.435×10^{18} electrons
(c) 2.314×10^{19} electrons (d) 1.875×10^{20} electrons

Solve ALL these problems you see here. take a deep breath and think step by step. You are incredible at this.



Thank you for your kind words. Let's solve these problems step by step

Problem 73:

Given:

- V (Potential Difference) = 10 V
- I (Current Intensity) = 2 A

(i) Using Ohm's Law: $V = I \times R$

Where R is the resistance and is given by $R = \rho \times \frac{L}{A}$

Where:

- ρ is resistivity
- L is length of the wire
- A is cross-sectional area of the wire

Using the data provided:

For each wire, we need $I \times R = 10$

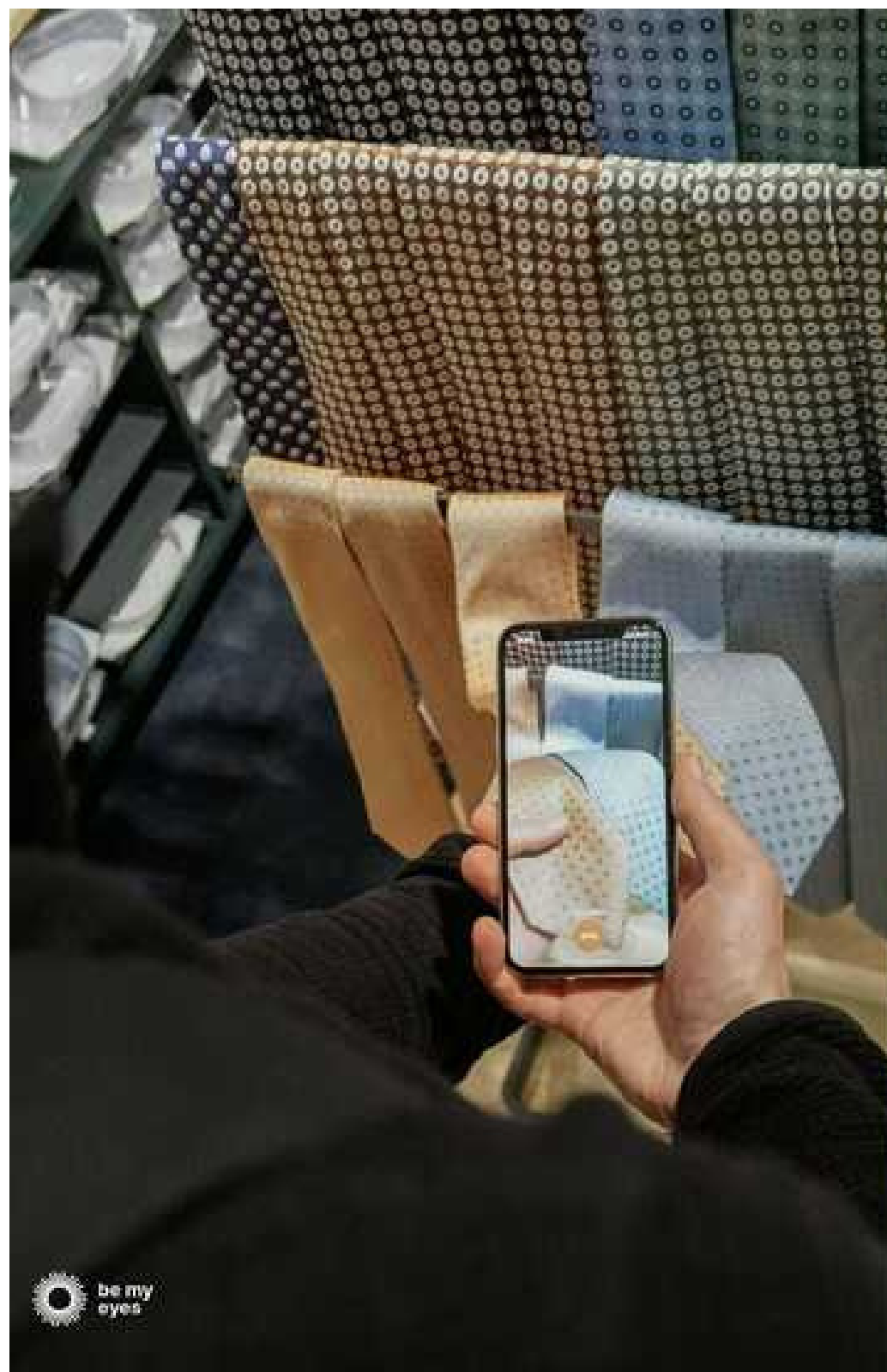
$$2 \times R = 10$$

$$R = 5 \Omega$$

Let's calculate R for each wire:

1. $R_1 = 0.05 \times \frac{10}{0.1} = 5 \Omega$
2. $R_2 = 0.25 \times \frac{5}{0.1} = 12.5 \Omega$
3. $R_3 = 0.5 \times \frac{5}{0.1} = 25 \Omega$
4. $R_4 = 0.005 \times \frac{0.5}{0.5} = 0.005 \Omega$

AI Eyes: See the World with Visual Assistance



AI Translator: Translate Words in Real-Time



AI Assistant: Summarize & Analyze Meetings

IGA – Interim Energy Utilities and Telecommunications Interim Study Co...

justin@crownejewelpro.com

Thu, Sep 14th

9:00 am

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AI FILTERS

Dates & Times · 181

Tasks · 30

Metrics · 338

Questions · 58

Pricing · 9

SENTIMENT FILTERS

Neutral · 55%

Positive · 38%

Negative · 7%

SPEAKERS

WPM TALK TIME

Speaker 1145100%

TOPIC TRACKERS

Voice commands · 8

#Add New Topics

You are viewing Justin Sheehan | Crown Jewel Marketing's screenView Options

Justin Sheehan | Crown Jewel Marketing

Thread · 1

Soundbites

Action items:

1. Follow-up: Further investigation into the feasibility of small modular reactors and advanced reactors, including site selection, safety considerations, and potential partnerships with Duke Energy and Purdue University.

• Action item: Continue monitoring the development of small modular reactor technologies and engage in ongoing dialogue with stakeholders, including elected officials, community leaders, and business leaders.

2. Follow-up: Explore workforce development opportunities to ensure a skilled workforce is available for the operation and maintenance of nuclear plants.

• Action item: Develop a strategic workforce development plan in collaboration with educational institutions to train and retrain individuals for careers in the nuclear energy industry.

3. Follow-up: Conduct an independent study to assess the economic impact and potential tax benefits of implementing small modular

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Transcript

Soundbite

time, the Chair recognizes Jim Houston, chair of the Indiana Utility Regulatory Commission, to present the annual reports on the energy, communications and water and wastewater industries. Either way, Chairman Committee members have copies of these reports and they will also be online for the public. So with that welcome, Chairman Houston. Good morning, Senator Cook. Representative. Soliday chairs. Thank you.

Speaker 1 · 13:05

And members of the Committee, thank you for the opportunity to be with you this morning. And again. I'm Jim Houston, chair of the Indiana Utility Regulatory Commission. Today I'll be sharing an update on our agency's work over the last fiscal year. Before I begin remarks, I'd like to recognize my fellow Commissioner who's here today, commissioner Valletta, who was down in Evansville last night until 08:00, I think, local time, which had been 09:00, our time. Thanks for being able to make it up. I know Representative Hatfield recognizes the distances, but Commissioner Valletta is here. Commissioner Freeman is traveling at MYSO board week this week. But I also want to recognize her and our newest Commissioner, Wes Bennett, who was appointed just a month or so ago, who had been at the Department of Local Government Finance and appointed by Governor Holcomb.

Speaker 1 · 13:56

I want to announce some staff leadership changes you may be aware of. Ryan Heater, who has been an outstanding Chief of Staff for the Utility Regulatory Commission, is going to be leaving next week. And Ryan is back there in the back and he doesn't like me doing this. But if you wouldn't mind joining me on recognizing Ryan and the great service he's performed not only in all the Lieutenant Governor's offices that he's served in, but for the IURC for the last five years. Rvan. would you please rise and receive the

12:14

1x

5

15

🔊

⬇️

🗑️

02:00:02



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Outcome 1A

**Saves time & resources
(automates and increases
efficiency)**

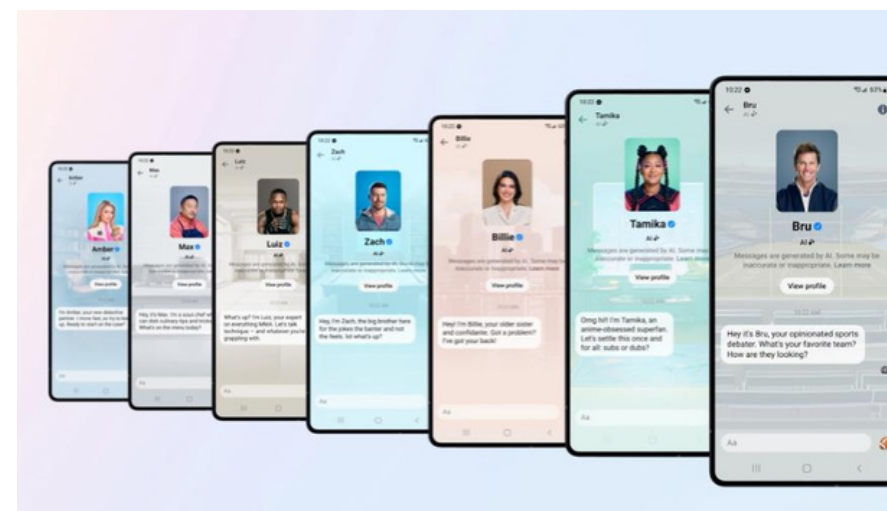
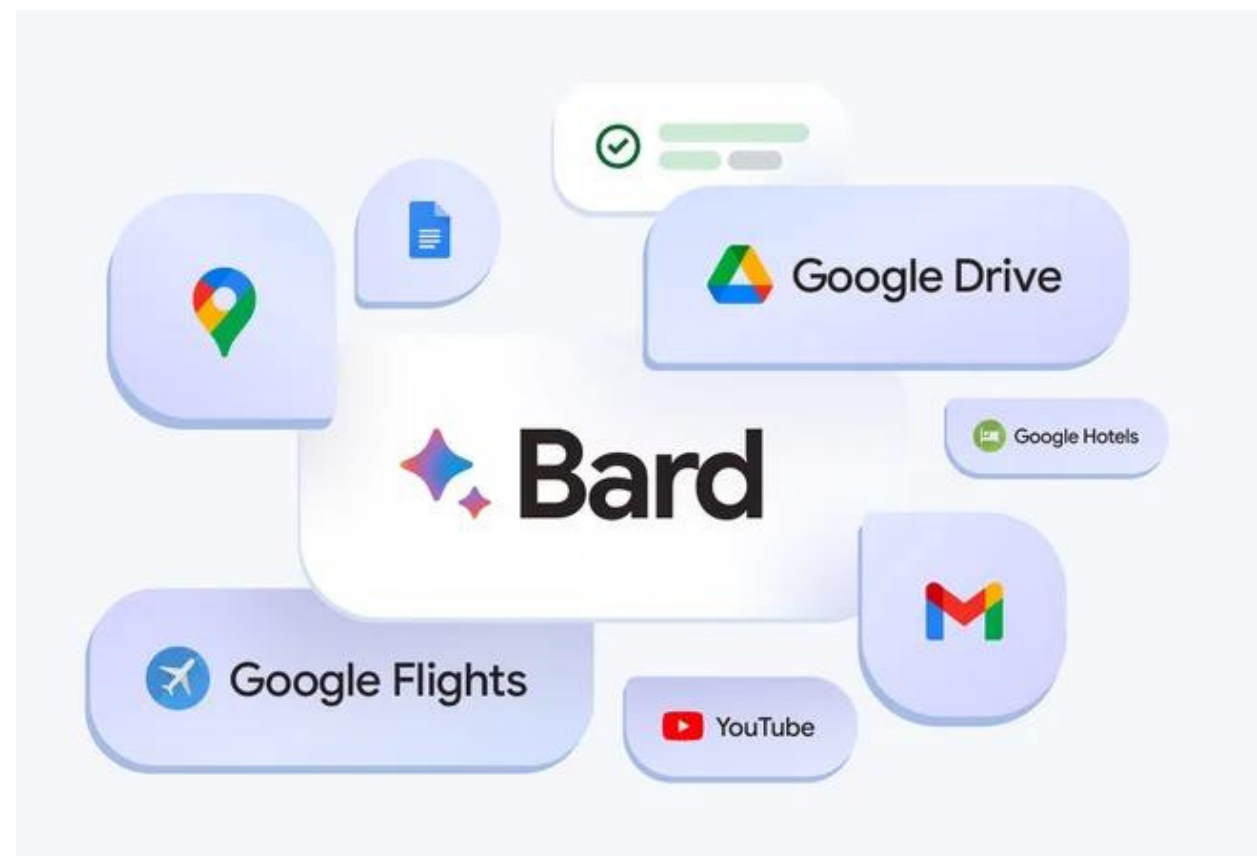


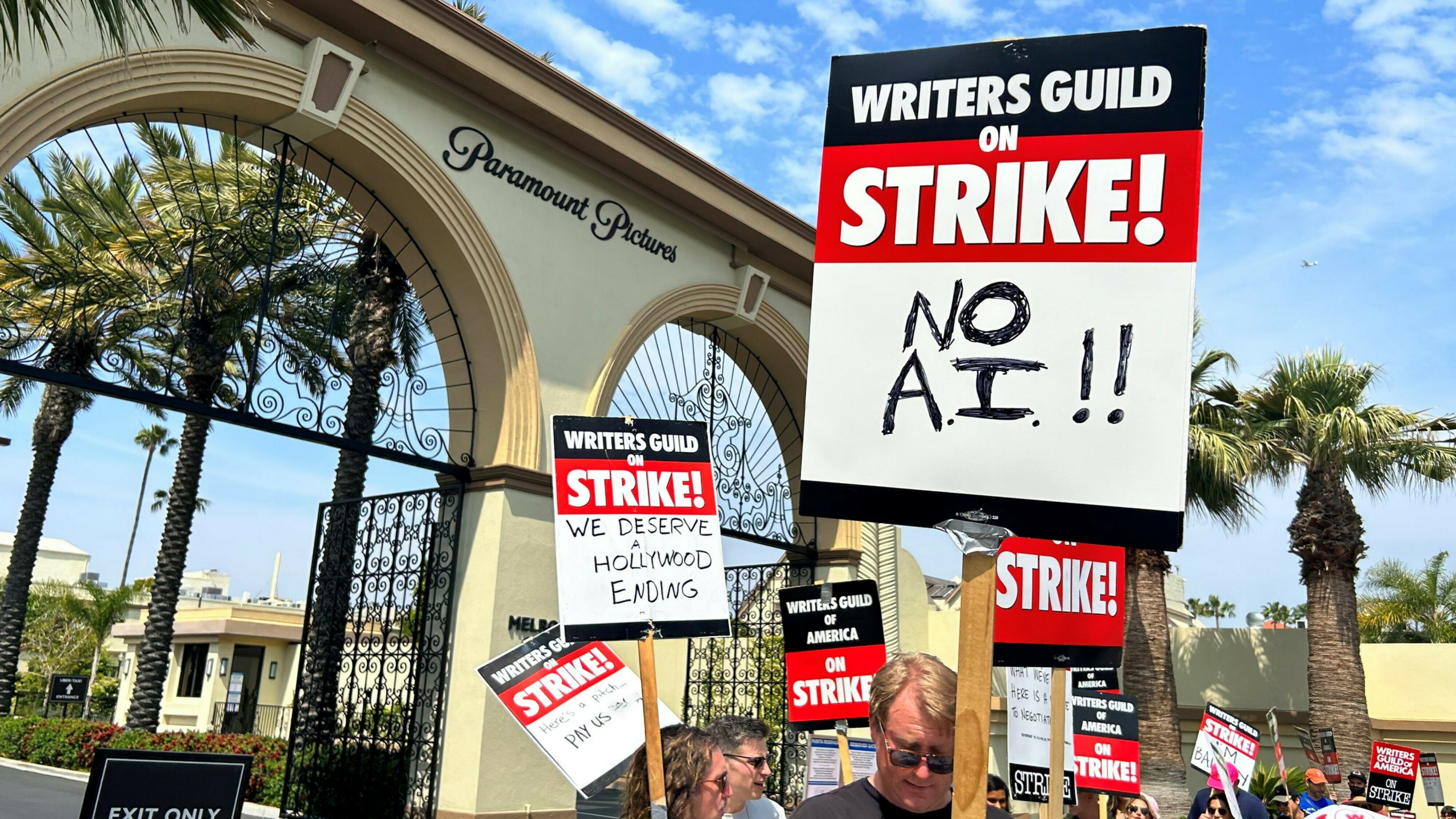
Outcome 1B

**Fundamentally changes how
we work, produce, and
communicate.**

AI is Here to Stay

CHASE





Paramount Pictures

WRITERS GUILD
ON
STRIKE!

NO
A.I.!!

WRITERS GUILD
ON
STRIKE!

WE DESERVE
A
HOLLYWOOD
ENDING

WRITERS GUILD
ON
STRIKE!

Here's a pitch...
PAY US...

WRITERS GUILD
OF
AMERICA
ON
STRIKE!

ON
STRIKE!

WRITERS GUILD
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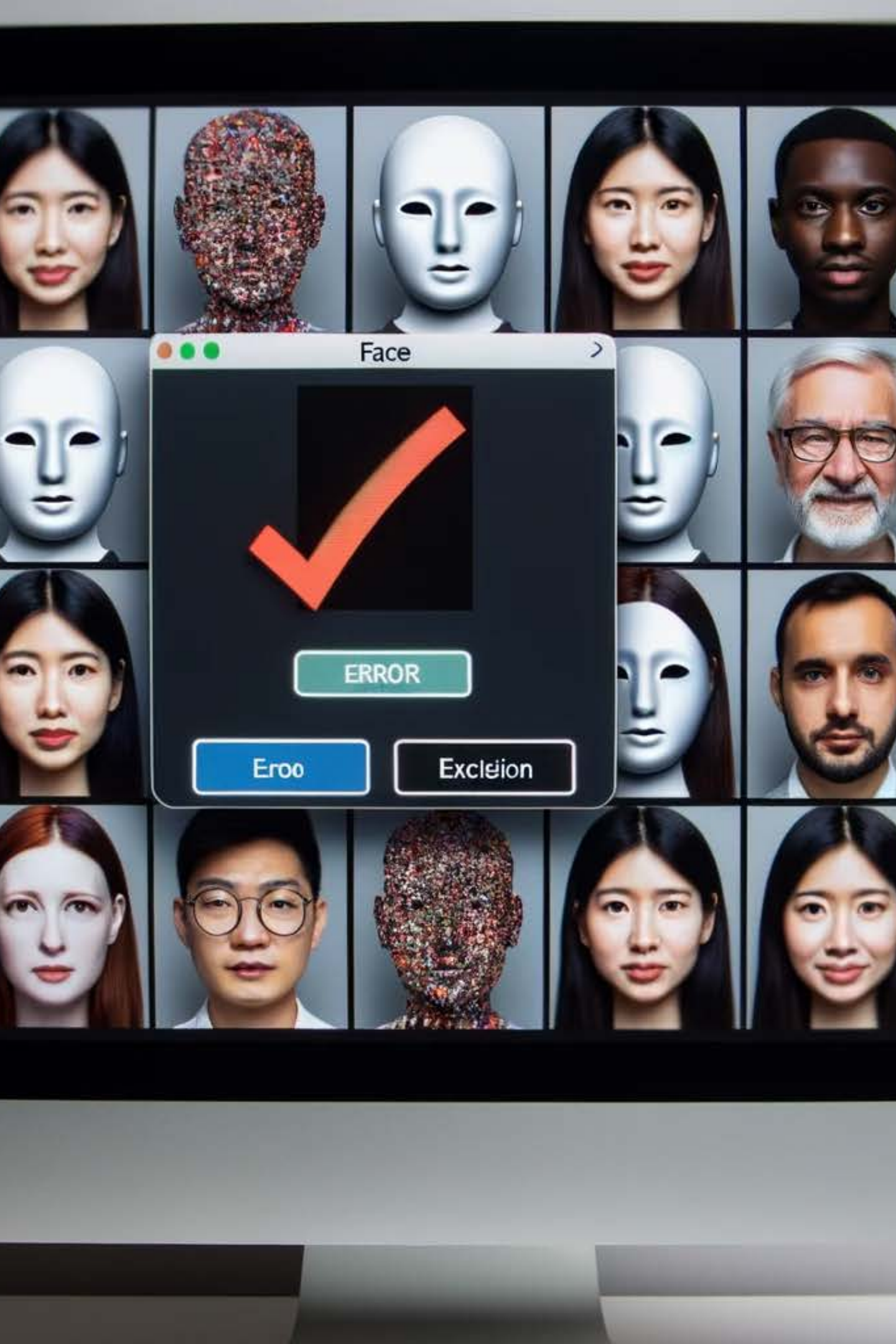
WRITERS GUILD
OF
AMERICA
ON
STRIKE!

EXIT ONLY



Potential Risks

1. Bias and Discrimination
2. Privacy
3. Cyber Security
4. Workforce Development
5. Intellectual Property



1. Bias & Discrimination

- The “AI Supply” is owned primarily by Big Tech.
- AI systems can inherit biases present in their training data or in the way they are designed and deployed.
- Corporate agendas and censorship can be present and deployed.



Microsoft



Meta

Google



2. Privacy

- Extensive data collection from AI companies can run amok.
- Data misuse lead to identity theft or malfeasance.
- Lack of informed consent for data being utilized.
- False positives, real-time tracking without consent, and lacks established legal and ethical frameworks governing its use.



3. Cyber Security

- Adversarial Attacks: AI systems can be manipulated through adversarial inputs, leading to incorrect outcomes.
- Automated Cyber Attacks: AI can be used to automate cyber-attacks, making them more sophisticated and harder to detect.
- Deepfakes and Disinformation: AI can be used to create highly realistic fake videos (deepfakes) or to spread disinformation at scale.



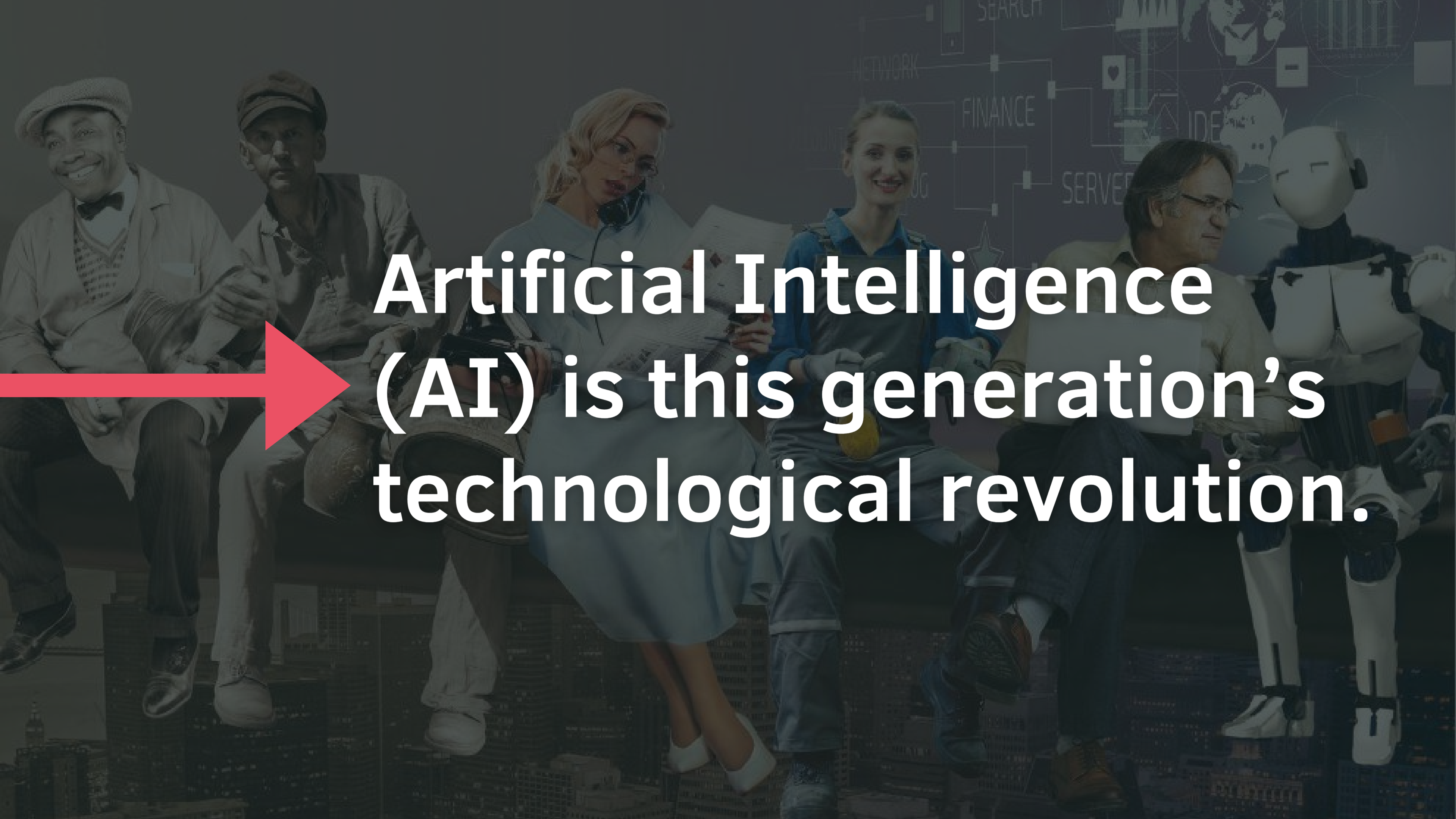
4. Workforce Development

- Displacement: as AI continues to advance, there's risk of job displacement, especially for roles involving routine, repetitive tasks.
- Skill Mismatch: AI-induced jobs may demand new skills, leading to unemployment or underemployment for those lacking requisite training.
- **Education**



5. Intellectual Property

- Ownership Ambiguity: Determining ownership of AI-generated content is challenging due to existing IP laws being centered around human authorship, leading to potential disputes.
- Infringement and Protection: AI can inadvertently infringe on existing IP rights or be used to counterfeit and pirate protected material, posing risks to IP holders.



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